

**Notice of Allowability**

Application No.

09/810,351

Examiner

Jonathan G. Sterrett

Applicant(s)

SPIRA ET AL.

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 2-9-2007.
2. ☒ The allowed claim(s) is/are 41-52.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 20070424.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

Beth Van Doren  
Beth Van Doren  
AU 3623  
Primary Examiner

***Allowance***

1. **Claims 41-52** are pending and allowed in the application. **Claims 1-40** have been cancelled and new **Claims 41-52** have been added by the examiner. Please see the examiner's amendment and reasons for allowance below.

***Examiner's Amendment***

2. An examiner's amendment to the record is attached to the Office Action. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Melvin A. Robinson Reg. 31,810 on 24 April 2007. See attached interview summary.

3. The following claims represent the claims pending in the application.

1-40. (cancelled)

41.(New) A computer-implemented method for providing maintenance services by aligning maintenance policies to business objectives of a customer, comprising the steps of:

(a) Performing an operational analysis to produce a diagnostic assessment of a potential customer's facility, wherein the diagnostic assessment

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identifies specific equipment and site maintenance requirements, wherein the equipment and site maintenance requirements are based on equipment categorized according to information technology, mechanical, electrical and HVAC;

(b) Determining processes utilizing the specific equipment identified in (a) above, and performing a criticality analysis that categorizes the processes as either critical or non-critical based on the impact a failed process has on the operation of the customer's facility;

(c) Performing a component identification of specific components that constitute the equipment utilized in the critical processes identified above;

(d) Analyzing the failure modes of the components identified in (c) above and determining which analytical technique or combination of analytical techniques is necessary to predict a component failure,

wherein the failure analytical techniques are at least one of: vibration, thermography, ultrasonic, oil analysis, motor current or alignment;

(e) Proposing an outsourced maintenance package, wherein the outsourced maintenance package includes providing one or more of the following services to the customer's facility: remote monitoring of facility equipment conditions; on call services that dispatch resources to the facility for providing maintenance, reconditioning of equipment, diagnostics and testing, spare parts, decontamination and management of motor fleets; wherein the outsourced maintenance package is based on providing maintenance support necessary for

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successful operation of the critical processes identified in (b) above

(f) Proposing a guarantee for providing the outsourced maintenance package in (e) based on calculating a numerical value based on a weighted average of the facility's key performance indicators, wherein the key performance indicators are at least one of numerical metrics of safety, facility availability, production quality and reduced operating costs, wherein said numerical value calculated is guaranteed to exceed a threshold;

(g) Establishing agreement with the potential customer to provide maintenance according to the outsourced maintenance package of step (e) and the guarantee of (f) above;

(h) Providing maintenance at the customer's industrial facility according to the agreement of (g);

(i) Further providing 24 hours a day, 7 days a week remote support by utilizing regional facilities that are located in at least three geographic regions around the world such that the regional facilities are staffed during normal daytime business hours; wherein the remote support provides the following services to the customer facility:

(1) providing on call support of expert advice; wherein the expert advice is provided by the regional facilities based on the information contained in a knowledge database; wherein the knowledge database utilizes historical information based on other, similar industrial facilities or components

(2) providing remote condition monitoring of the components

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identified in (c) utilizing at least one of the analytical techniques identified in (d); wherein the remote condition monitoring is further enhanced utilizing the knowledge database;

(j) Benchmarking the customer facility's key performance indicators against comparable other facilities to improve the performance of the maintenance provider against the benchmark.

42 (new). The method of claim 41, further comprising the steps of:

providing a single headquarters location; and providing Internet connections between said single headquarters location and said regional facilities.

43 (new). The method of claim 41, wherein said regional facilities are provided for at least three regions, said three regions being: the Far East, the European Union and a NAFTA country.

44 (new). The method of claim 41, wherein said regional facilities supervise manpower requirements for said customer's facility.

45 (new). The method of claim 42, further comprising the steps of transferring program modules from said regional facilities to said customer's

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facility through said Internet connections.

46 (new). The method of claim 42, further comprising the step of:

providing supervisory control of maintenance services at said customer's facility from said regional facility through said Internet connections.

47 (new). The method of Claim 41, wherein said customer's facility is an airport.

48 (new). The method of Claim 41, wherein said customer's facility is a power plant.

49 (new). The method of Claim 48, wherein said power plant is one of: a fossil fuel plant, an atomic energy plant, and a hydroelectric power plant.

50 (new). The method of Claim 41, wherein said outsourced maintenance package further includes providing human resources support to said customer facility.

51 (new). The method of Claim 41, wherein said outsourced maintenance

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package further includes providing maintenance training to personnel based at said customer's facility.

52.(New) A computer-implemented method for providing maintenance services by aligning maintenance policies to business objectives of a customer, comprising the steps of:

(a) Performing an operational analysis to produce a diagnostic assessment of a potential customer's facility, wherein the diagnostic assessment identifies specific equipment and site maintenance requirements, wherein the equipment and site maintenance requirements are based on equipment categorized according to information technology, mechanical, electrical and HVAC;

(b) Determining processes utilizing the specific equipment identified in (a) above, and performing a criticality analysis that categorizes the processes as either critical or non-critical based on the impact a failed process has on the operation of the customer's facility;

(c) Performing a component identification of specific components that constitute the equipment utilized in the critical processes identified above;

(d) Analyzing the failure modes of the components identified in (c) above and determining which analytical technique or combination of analytical techniques is necessary to predict a component failure,

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wherein the failure analytical techniques are at least one of: vibration, thermography, ultrasonic, oil analysis, motor current or alignment;

(e) Proposing an outsourced maintenance package, wherein the outsourced maintenance package includes providing one or more of the following services to the customer's facility: remote monitoring of facility equipment conditions; on call services that dispatch resources to the facility for providing maintenance, reconditioning of equipment, diagnostics and testing, spare parts, decontamination and management of motor fleets; wherein the outsourced maintenance package is based on providing maintenance support necessary for successful operation of the critical processes identified in (b) above

(f) Proposing a guarantee for providing the outsourced maintenance package in (e) based on calculating a numerical value based on a weighted average of the facility's key performance indicators, wherein the key performance indicators are numerical metrics of safety, facility availability, production quality and reduced operating costs, wherein said numerical value calculated is guaranteed to exceed a threshold;

(g) Establishing agreement with the potential customer to provide maintenance according to the outsourced maintenance package of step (e) and the guarantee of (f) above;

(h) Providing maintenance at the customer's industrial facility according to the agreement of (g);

(i) Further providing 24 hours a day, 7 days a week remote support by



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utilizing regional facilities that are located in at least three geographic regions around the world such that the regional facilities are staffed during normal daytime business hours; wherein the remote support provides the following services to the customer facility:

(1) providing on call support of expert advice; wherein the expert advice is provided by the regional facilities based on the information contained in a knowledge database; wherein the knowledge database utilizes historical information based on other, similar industrial facilities or components

(2) providing remote condition monitoring of the components identified in (c) utilizing at least one of the analytical techniques identified in (d); wherein the remote condition monitoring is further enhanced utilizing the knowledge database;

(j) Benchmarking the customer facility's key performance indicators against comparable other facilities to improve the performance of the maintenance provider against the benchmark.

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***Allowable Subject Matter***

5. **Claims 41-52** are allowed.

***Reasons for Allowance***

6. The following is a statement of reasons for the indication of allowable subject matter:

While pieces of prior art each teach many of the features of the claimed invention, there is no motivation found within the art to combine these teachings to result in the claimed subject matter and, even if one was to combine the references, the combination would not expressly result in the claimed subject matter.

The prior art references most closely resembling the Applicant's claimed invention are **Cornett** US 5,216,612, "Single Source Maintenance" by Paul **Bird**, and **Staples** US 6,301,339.

As for independent **Claims 41 and 52**, none of the prior art of record, taken individually or in any combination, teach, inter alia,

Analyzing a facility to determine maintenance requirements according to information technology, mechanical, electrical and HVAC categories and determining critical and non-critical processes that utilize the specific equipment identified;

identifying components according to the maintenance requirements that

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constitute the equipment utilized in the critical processes identified above;

analyzing the failure modes of the components identified according to vibration, thermography, ultrasonic, oil analysis and motor current or alignment; and determining which analytical technique or combination of analytical techniques is necessary to predict a component failure,

proposing an outsourced maintenance package, including the services of: remote monitoring of facility equipment conditions; on call services that dispatch resources to the facility for providing maintenance, reconditioning of equipment, diagnostics and testing, spare parts, decontamination and management of motor fleets; where these services necessary for successful operation of the critical processes

proposing a maintenance guarantee based on calculating a number value based on a calculation of one or more of the numerical metrics of safety, facility availability, production quality and reduced operating costs, where this numerical value calculated is guaranteed to exceed a threshold;

establishing agreement with the potential customer to provide maintenance according to the outsourced maintenance package and the guarantee;

providing maintenance at the customer's industrial facility according to the agreement which also includes providing 24 hours a day, 7 days a week remote support by utilizing regional facilities that are located in at least three geographic regions around the world;

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providing on call support of expert advice that uses information contained in a knowledge database that utilizes historical information based on other, similar industrial facilities or components;

providing remote condition monitoring of the components utilizing at least one of the analytical techniques and utilizing the knowledge database;

benchmarking the customer facility's key performance indicators against comparable other facilities to improve the performance of the maintenance provider against the benchmark.

First Cornett teaches a maintenance management system for managing maintenance in a facility that uses near and long term maintenance planning, utilizes predictive maintenance tools to anticipate when parts are going to fail, and provide a separate maintenance organization within a facility for supporting maintenance. However, Cornett does not teach providing an outsourced maintenance agreement that utilizes a guarantee based on a number of key factors, where the maintenance outsourcing is supervised through a central location, where a knowledge database using knowledge from similar facilities is used to provide expert advice in providing maintenance. Cornett also does not teach where the failure mode prediction for parts being supported as part of the maintenance agreement is provided through remote monitoring and does not teach benchmarking a facilities indicators against other, similar facilities' indicators to improve performance.

Bird teaches providing outsourced maintenance by a single company

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where a supplier provides a wide range of support. However, Bird's teachings are primarily focused on the IT area and not on remote monitoring of equipment to determine failure according to the analytical techniques of thermography, ultrasonic, oil analysis and motor current or alignment. Bird suggests providing a guarantee based on outsourcing maintenance, but this is distinguished from the guarantee by the applicant's invention, because Bird's guarantee is a service level agreement where higher levels of service require additional payment, i.e. cost. The applicant's guarantee is that the levels of service are provided with also a reduction in costs. Bird does not teach remote monitoring of maintenance services where a knowledge database is used of other comparable equipment to provide expert advice.

Staples teaches providing remote office connectivity with internet and network connections to provide remote users with connectivity to a central office and with each other. However, Staples does not address where remote monitoring of equipment is provided for the purpose of indicating when a part is likely to fail or to provide remote maintenance support expert advice. Staples does not teach using a knowledge database to provide expert advice in providing maintenance support remotely.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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**Conclusion**

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

JP02001249964A by Akaeda discloses a maintenance management system for managing spare parts.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan G. Sterrett whose telephone number is 571-272-6881. The examiner can normally be reached on 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on 571-272-6729.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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